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Of 27 children considered educationally handicapped (EH) who were screened by a psychological-medical team, 24 were eligible for a special pilot class for neurologically handicapped (brain damaged) children. Eight children were placed in the special class and made consistently greater gains in IQ scores, academic skills, and general behavior than the 14 remaining in regular classrooms. The multi-author report of the program provides a summary and background information, results, and a neurological appraisal of the hyperkinetic child. Also described are suggested environment, basic philosophy, and a guide for screening applicants for special programs and classes for EH children. References, illustrations, and forms are included. (MK)

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CALIFORNIA ASSOCIATION FOR
NEUROLOGICALLY HANDICAPPED
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THE SAN MATEO COUNTY PILOT STUDY OF NEUROLOGICALLY HANDICAPPED CHILDREN

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SUMMARY OF PILOT PROGRAM FOR EDUCATIONALLY HANDICAPPED CHILDREN

by

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February 19, 1964

SUMMARY OF PILOT PROGRAM FOR EDUCATIONALLY HANDICAPPED CHILDREN
(brain damaged)

In 1960-61 San Mateo County embarked on a screening program for placement of neurologically handicapped (brain damaged) children in a Pilot Study Class.

The basic screening procedures were worked out the previous year by a subcommittee of school psychologists within the County.

Twenty-seven children were screened for the Pilot Study Class. Twenty-four were considered eligible for the class by the Evaluation Committee but only eight were actually placed in the class.

Screening included the initial identification of a behavioral or learning problem by the classroom teacher. The next step was referral of the child to a school psychologist. After a thorough individual psychological study, children found to be suspected of a neurological handicap were referred to a medical team consisting of a pediatrician, a neurologist, and a psychiatrist. This team also served as members of the Evaluation Committee along with representatives of the educational staff.

Four major considerations needed to be met prior to the Evaluation Committee's recommendation for placement in the special class. These were:

1) unequivocal medical confirmation of neurological impairment;
2) evidence that the child was not able to benefit from regular classroom placement;
3) evidence that the child could not more appropriately be placed in other existing special education programs; and
4) consideration of the child's chronological age needs as related to the age range of the special class, which in this case was ages nine to twelve.

A comparison was made between the eight children in the Pilot Study Class and fourteen of the remaining twenty-four children identified but still in regular classrooms. An objective appraisal of factual information accruing from this study favors special class placement.

The most apparent immediate value of the special class is that it provided a full school day educational program for children who previously were not able to attend school or benefit from a regular classroom placement.

Half of the children remaining in regular class programs were casualties of public education in a broad sense. Two were expelled from school; two were on partial day programs; one was placed in a private school; one was placed in a class for educable retarded children and one was placed in a class for trainable retarded children.

The children in the special class showed consistent and generally greater gains in their ability to function intellectually as determined by standardized, individual intelligence testing.

The mean change in WISC IQ's for the special class were consistently in a positive direction and ranged from seven to ten points. They tended to vary around zero for children in regular classes and ranged from minus point eleven to one point forty-four.

Academic skills also tended to show greater and more consistent gains for the special class. The mean academic growth per school year was eighty per cent as compared with fifty per cent for the regular class.

Parent observations for both groups of behavior at home and in the community, effects of medication, and the child's attitude toward school were obtained by the questionnaire method. Incidence of improved attitudes toward school was 81.7% for the special class and only 33.1% for the children remaining in regular classroom programs.

The apparent success of the program did not seem attributable or dependent upon any one factor. Some of these factors were:

small class size;
a talented, creative, and experienced teacher;
adaptations in classroom physical structure;
implementation of an appropriate medical regimen;
high parental support of school goals; and many others.

Subsequent to this study three classes making a total of twenty-four children are now in operation and are being administered by the San Mateo County Superintendent of Schools Office through its Department of Special Schools. It is anticipated that these children will be referred to district programs beginning the next school year as provided by Assembly Bill 464.

BACKGROUND INFORMATION REGARDING

PILOT DEMONSTRATION PROGRAM

for

EDUCATIONALLY HANDICAPPED CHILDREN

operated by the

SAN MATEO COUNTY SUPERINTENDENT OF SCHOOLS OFFICE

1960-1964

by

William S. Herbig

William S. Herbig
Director of Special Schools
Office of the San Mateo County
Superintendent of Schools
February 27, 1964

Steps in the development of the Pilot Demonstration Program for Neurologically Handicapped Children in San Mateo County.

At one of the regular meetings of the District Superintendent's Association in the Spring of 1959, the County Superintendent's Office presented information concerning children who appeared to be educable but who were not attending school or who were going to school on a limited contact basis.

This discussion with the District Superintendent resulted primarily from children being referred to the County operated program for orthopedically handicapped and cerebral palsied children. These children somewhere along the diagnostic road had been labeled with the words "cerebral palsy" and as a result of this diagnosis were referred for possible placement in this program. It became increasingly more apparent that while there was no question that these children had a severe learning or behavioral problem they were not physically handicapped from the concept of motor involvement. Our Evaluation Committee did not accept these children.

It was our feeling that the districts in San Mateo County should be acquainted with this growing problem and hopefully steps would be taken in the direction of solving it.

As a result of the information presented to the District Superintendents a motion was unanimously passed that the County Superintendent of Schools Office and the County Board of Education set up a program for neurologically handicapped children.

This recommendation was approved by the County Superintendent's Office and the County Board of Education. A tentative target date was established for September 1960. The District Superintendents had hopefully asked for a program to be started in September 1959, but this did not appear to be a feasible date.

Our immediate problem now that the decision was made to set up a program was to try to find out something about it. In November 1959, personnel from the County Office visited the classes which were being operated in the school districts in Los Angeles County.

Edward Kueffer, our Special Education Psychologist, was working with a committee of school psychologists of San Mateo County to develop a screening guide that could be used to start the identification process for neurologically handicapped children.

In the latter part of January 1960, Mr. Warren Natwick, Assistant County Superintendent of Schools, wrote a letter to Dr. Ernie Willenberg, who was at that time Chief, Bureau of Special Education, requesting approval for San Mateo County to set up a pilot demonstration program for neurologically handicapped children.

In the early part of February a letter was received from Dr. Willenberg giving us approval, and in part Dr. Willenberg's letter stated, "You are hereby given approval to initiate and operate a program of special education for neurologically handicapped children as a part of the state plan for instruction of physically handicapped minors. It is expected that such a class will serve as a demonstration project for the benefit of northern California school personnel who are interested in the problem of educating neurologically handicapped children in the public schools."

The personnel concerned with the pilot program felt one of the essential things to be obtained was adequate medical diagnostic services. In June 1960, Dr. Charles R. Gardipee, Chief, Bureau of Crippled Childrens Services, was contacted concerning the possibility of the State CCS providing medical diagnostic services for the pilot demonstration program.

In the middle of July a letter was received from Dr. Ralph Hornberger, Medical Director for State CCS, indicating Dr. Gardipee's willingness to provide funds for diagnostic services. He indicated that it was the State CCS's feelings that San Mateo County possessed the medical specialities needed for such a program and suggested that the State CCS, local CCS, and the County Schools Office meet and discuss the implementation of the medical services.

The State CCS agreed to authorize 30 diagnostic evaluations and requested Dr. Harold Wynns, Superintendent of the Medical Division of the San Mateo County Department of Public Health and Welfare to suggest names of local physicians who might be interested in participating in this program.

Dr. Wynns suggested the names of several physicians. Dr. Hornberger indicated that he had talked with Dr. Henry S. Richanbach, a Physician in the private practice of Pediatrics in Burlingame; Assistant Clinical Professor, Pediatrics, Stanford; Immediate Past Chairman of the Pediatrics Section of the California Medical Association, who indicated a willingness to participate in this project. Several meetings were held with Dr. Richanbach and at the same time the State CCS was working up a draft for procedures to be followed for the medical diagnosis of neurologically handicapped children. The procedure agreed upon is prefaced with this statement: "San Mateo County Special Study of Neurologically Handicapped Children".

The California State Department of Public Health through the Bureau of Crippled Childrens Services, in cooperation with the San Mateo County School Department, has agreed to provide the necessary diagnostic services for school age children suspected of organic brain damage resulting in hyperactivity or other evidence of emotional disturbance for which special classroom placement appears indicated. The Bureau of CCS is participating in this study for the two-fold purpose of assembling data relative to the diagnosis of such conditions, and the diagnostic services presumably necessary to establish such diagnoses.

Dr. Richanbach has been designated as the Pediatric Coordinator for those children referred for diagnostics under this program. All cases will be initially authorized to Dr. Richanbach as Pediatric Coordinator; Dr. Wm. Anderson, Neurologist of San Francisco; and Dr. Max Silver, Psychiatrist of San Mateo. Dr. Silver found he could not continue with the program and was in the early stages replaced by Dr. Olga Bridgman.

Upon Dr. Richanbach's request other consultants will be authorized as indicated. The fees agreed upon were: Pediatric Coordinator, $50. per case; Neurologist, $25. per case; Psychiatrist, $25. per case. Other consultants on the basis of individual reports, CCS fee schedule rates. Laboratory services, CCS fee schedule rates. It was also agreed every child would have an EEG.

In December 1960, a letter was sent out by the County Superintendent's Office to all school districts indicating progress of this pilot program and letting each school district know that children accepted for this program would be on a contract tuition basis.

In May 1960, Mrs. Madeleine Lassers, who was currently teaching in the County operated program for educable children, spent two days in Los Angeles visiting pilot demonstration classes.

In order to get the class started approximately with the opening of the school year of 1960-61 the first student was enrolled September 26, 1960. This student was a transfer from one of the pilot classes in the Los Angeles area. The second student was enrolled on September 30, 1960. This student was a youngster well-known to the school department for some time and was a mildly cerebral palsy child with severe learning disability. Even though the Evaluation Committee had not met officially it was administratively agreed that there was no question concerning the eligibility of these two students.

The first meeting of the Evaluation Committee for Neurologically Handicapped Children was held November 22, 1960. Three children were discussed and accepted for placement in the program.

The County Office is currently operating three classes for Neurologically Handicapped Children, one at the Monroe School in Redwood City, one at the El Portal School in San Mateo, and one at the Martin School in South San Francisco.

As a result of an article concerning our program which appeared in the February 1964 issue of Parents' Magazine, we have been getting letters from various parts of the United States and Canada. One of the questions that appears in a great many of these letters is the question "How can we get our child diagnosed when we do not live near a large medical facility or a teaching hospital or a diagnostic clinic?"

From our three and one-half years of experience in this program our Evaluation Team certainly agrees that the determination of a behavioral disorder or a neurological deficit is certainl, a medical diagnosis but that this diagnosis does not have to be made at a medical facility or a teaching hospital or a comprehensive

medical clinic. We feel that the best source for a medical diagnosis of children under AB464 rests with physicians in private practice in the local community.

I think this is ably demonstrated in view of the fact that our medical team for this pilot project is composed of members who are first physicians with a private practice and secondly a diagnostic team for neurologically handicapped children.

THE
SAN MATEO COUNTY
PILOT STUDY
OF
NEUROLOGICALLY HANDICAPPED CHILDREN

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of
Dr. H. S. Richanbach

Presented at the California Medical Association Meeting
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THE SAN MATEO COUNTY PILOT STUDY OF NEUROLOGICALLY HANDICAPPED CHILDREN

This study is concerned 1) with the contribution that organic brain injury may make towards school failure in children who are felt to have average or better intellectual potential, and 2) with the benefits that may be obtained with the use of a special class and management geared for these particular behavior and learning problems. These are children who have not qualified for any of the existing special school programs, such as those for the deaf, blind, mentally retarded, cerebral palsied, etc. These studies were carried out in the San Mateo County Schools as a pilot project for the California Crippled Childrens' Services and the California State Department of Special Education.

It was our aim to determine the amount and kind of effort which would be needed to identify such children, to find those who would benefit from intervention and a special educational program, to determine the effectiveness of the special class, and to estimate the incidence of these handicaps.

There are many excellent descriptions of the personality patterns and characteristics of children with minimal brain damage or dysfunction, or "organically driven" or neurologically handicapped children A "characteristic" child would be a male, hyperactive and distractible, impulsive, aggressive, affectionless, left-handed with mixed dominance, and physically clumsy. He will not succeed or behave well anywhere, and will probably have shattered at least one teacher's faith in her 20 years of experience. His bizarre behavior will alter his relationships with his family and his playmates significantly enough to affect his own emotional growth.

The physician is consulted to find the cure, or the medicine that will quiet him, or to find a positive Babinski or an abnormal EEG so that the child may enter a special class. The variations in cerebration and perception that psychologists interpret as evidence of organicity are identified by a child's performance on such tests as the Wechsler Intelligence Scale for Children (WISC) which shows subtest scatter, or the twists and distortions in his Bender-Gestalt reproductions, by the way he "Draws-a-Man", etc.

We have been careful to select children with estimates of average or better intellectual capability, even though many of the same problems are often seen in retarded and cerebral palsied children. An IQ of 80 was used as a rough dividing line, but the judgment of the examiner was considered more reliable than a numerical score. Children who came close to the "characteristic" child previously described above do turn up, but making the diagnosis of brain injury or dysfunction sufficient to alter the child's behavior and learning to the point of being a school handicap will not necessarily identify a typical child.

METHOD:

Most studies of brain-injured children have come from diagnostic and treatment facilities and referral centers, such as psychiatric clinics and hospitals, neurology clinics, epilepsy clinics, etc. It was felt that the careful study of a normal school group would help provide useful data, such as an estimate of incidence.

Since the fall of 1960, 43 children have been evaluated in a 2-part study. Group I contained 27 children who were considered to be school failures, and were submitted for study from the various school districts of San Mateo County on the basis of psychological studies which suggested that behavior or learning difficulties, or both, were on an organic basis and were contributing significantly to the childrens' school failure. Some were no longer attending school, some were in school on a part-time basis. Many had had prior medical evaluations.

The children in Group II have been screened from the entire 4th grade population of the city of Belmont. A total of 347 children received a screening test prepared by the project psychologist and administered by the teachers. This test includes information on behavior and learning, as well as some simple Bender reproductions. Those children whose test results suggested organic impairment were tested in greater detail, and ultimately referred to the medical diagnostic team.

Most of the children in both Group I and Group II had been in the school district for a year or more, so that longitudinal studies of their school performance were available to the examiners. Each child received a battery of tests, including the Wechsler Intelligence Scale for Children, the Bender-Gestalt, the Draw-a-Man, the Wide Range Achievement Scale, tests for laterality and other tests as indicated. Each child had an electroencephalogram.

The children were seen, in turn, by the pediatrician, neurologist, and child psychiatrist of the Study Team. The examinations were carried out at separate times with previous testing evaluations available. The final diagnosis and recommendations were made at a joint meeting of the psychologists, physicians, and educators involved in the program. These Evaluation Committee meetings were held in the evenings over a 2-year period, and an average of three children were discussed at each meeting. The presence or absence of organic brain injury was decided at this time, and eligibility and recommendation for special class placement was decided.

The diagnosis of organic brain injury was considered only after all the examiners had completed their evaluations, with access to school records and detailed psychological test results and observations. A complete pediatric history and physical examination were performed, with special attention to possible etiology, including perinatal abnormalities, injuries, illnesses, and any sequelae. Behavioral and developmental histories were explosed; the opportunity for more than one examiner to take a detailed history often brought out additional information.

A detailed and expert neurological examination has been highly productive of positive findings. While findings of variable significance, such as mirror movements and simultaneous stimulation, EEG abnormalities, and abnormal psychological test results were not considered to be diagnostic in themselves, in some children the presence of gross pyramidal or extrapyramidal tract abnormalities made a diagnosis obvious.

The diagnosis of organic brain injury with related disorders of behavior, perception or learning was considered necessary for a child to be eligible for the special class, but the recommendation for special class placement was made only after considerable discussion by the evaluation committee. This decision, involving the most appropriate and desirable disposition for a particular child in relation to his total environment - including school and family - requires the most sophisticated thought and assessment.

The evaluation committee meetings also permitted study of progress reports on children previously evaluated. The final diagnosis and summary report on each child was prepared by the pediatrician, who served as coordinator. Consultations with regard to visual, speech, hearing and other communication disorders were obtained as needed. Copies of the reports were made available to the children's private physician, and to the appropriate school authorities.

The special classroom was limited to 8 students and designed to (1) reduce environmental stimuli, (2) reduce the environmental space, (3) institute a structured school program and help the family to extend it into the home, and (4) increase the value of teaching materials (Cruikshank). It was considered most suitable for the hyperactive and distractible child. A normal busy, colorful, and sometimes noisy classroom is excessively stimulating to such a child. Learning is almost impossible and he may become noisy and disruptive or a frightened recluse.

Needless to say, a parent's group was formed and includes many families besides those whose children were placed in the initial class.

Those of the evaluated children from Group I for whom there was no room in the class served as rough controls. Many of the families were involved in therapy from various community resources, and many of the children received medications from their own physicians. While observations were made, no controlled studies were done in these areas.

Twenty-five of the twenty-seven children in Group I who were studied because of their school failures had medical evidence of organic brain damage. These children were referred from a number of school districts within the county, and ranged in age from 8 to 14 years. Only two of these children were achieving at grade level in spite of estimates of average or better intellectual potential. Twenty-two were recommended for the special class.

One of the children who was achieving above grade level is one of the most hyperactive and distractible. His local schools were unable to keep him in a third grade class because of his behavior and after two years in our special class, his teacher still does not think he is equipped to survive in a regular classroom. In the special class as a 5th grader he is doing mostly 9th and 10th grade work and actual measurements of his IQ have risen 10 to 15 points. Estimates place him at a much higher level. His parents are older people, loving, and apparently most patient because his behavior does not seem to bother them. He is a sweet, sensitive child, not at all aggressive or anxious.

The 16 children in Group II who were screened from the 347 fourth graders in the Belmont schools as having abnormal psychological test results due to organic factors represent about 5% of that population. A 17th child had been identified the year before and is included in Group I as a school failure problem. Ten of these 16 children from Group II, or about 3% of the fourth graders, were diagnosed as having organic brain injury. However, 12 of the Group II children were achieving at or above grade level and only one child was recommended for special class placement (2 if the 17th child in Group I is included). This makes an incidence of 0.3% to 0.5% of a school population being considered as needing special class placement because of the effects of brain injury.

Other, less complete, data submitted by the district psychologists (there are 76,000 children in the primary grades in San Mateo County) produced 77 children who were considered to be school failures due to brain injury, or 0.1% of the population. The incidence of children who are in critical need of some sort of special management because of organic brain dysfunction present with adequate intellectual potential is estimated to be between 0.1% and 0.5%.

Comparison of Group I and Group II produces many similarities, and some interesting differences. Almost all of the children from both Group I and II (over 90%) were found to have abnormal EEG's - an interesting comparison in these selected groups to the usually quoted 20% abnormal incidence in a normal population.

There was no typical personality and no uniform psychological test pattern. Children from both groups tended to be hyperactive and distractible, with shortened attention spans. Most of the children had some degree of impaired physical performance and exhibited some disorganization. As one mother put it: "Boys are messy, but Steve is a pig." Lack of success with peers was common, and a preference for play with younger children was noted.

Although the two groups of children had similar abnormalities on psychological and neurological examinations, the children in Group II screened from a normal school population were a much more successful group, both at home and at school. Environmental factors play an important part in determining how much handicap will be manifested in any given child with pre-existing brain injury.

Eleven of the children in Group I were considered to be major problems with regard to their behavior both at home and at school, while others were oppressive mostly to the school people. One delightful child who has never troubled anyone, was learning practically nothing and was one of two aphasic children positively identified. Nine gave histories of "different" behavior from earliest infancy - usually hyperactivity; 4 were noted during the second year to be different, 4 came from broken or seriously disturbed homes, 10 were considered to have significant emotional problems which contributed to their school failure.

Of the 16 children in Group II from Belmont, there were 5 with behavior problems, 2 of these both at home and at school. Four of the children in this group were felt to have been "different" from infancy and 2 were from broken or disturbed homes.

Other findings which seem to be associated are left-handedness and mixed dominance, and learning difficulties in parents and siblings. Although social case work studies of these families have not been done, it would be interesting to do them to help identify the influence of family structure on these children.

Of the 27 children in Group I seen for school failure, 6 were girls, and 5 of the 25 diagnosed as having brain injury were girls. On the other hand, 9 of the 16 children in Group II were females and 7 of the 10 Belmont children with identifiable brain injury were girls. The one child recommended for the special class

was a boy. It would seem from this data that, whatever the effects of brain damage might be, the boy's chances of coping with them at home or at school are not as good as a girl's.

An attempt was made to identify an etiology in each child. Over half of the children in both Groups had histories of some sort of perinatal difficulty, the relevance of which was hard to evaluate. There were several prematures, one of whom had retrolental fibroplasia with his brain injury. Histories of head injuries, encephalitis, craniostenosis, and a CVA were obtained. Only 1, a closed head injury at age 6 years, occurred after the age of 3.

The timing of the injury in early childhood, usually before the age of 3, has been noted by others (Ounsted), and is probably significant in terms of the reparative powers of the immature brain, and the influence that all the factors under the heading of Growth and Development must exert on this child who starts out in life with different equipment from the normal (Eisenberg, Bradley, Pond). It seems reasonable to expect that a brain that is functionally damaged or different from an early age may be associated with an individual who is also different in his behavior, emotional development, adjustment, and ability to function in the various areas of learning.

Of impressive help to many of the families in this study was their realization that a major source of the difficulty with their child was the inherent difference in the child, and that they were not entirely at fault (as "bad" parents). Counseling and psychotherapy can be more effective for these families when they consider the abnormalities and differences that some children bring into the family scene.

A measure of the success of the special class as a means of managing brain-injured children is that 7 of the 8 children admitted stayed in school, maintained their previous level of achievement, and advanced at approximately the expected rate for the time spent (an 80% rise in WRA scores). One child was dropped for failure to attend classes. A few children made several years' growth in achievement in less than 2 years, and some IQ scores rose as much as 28 points on retesting. In spite of this, it is still the impression of the staff that none of these children is equipped, as yet, to survive in regular classrooms.

Controlled studies of the children not admitted to the initial class, though recommended for it, were not done. Questioning of their parents revealed only one-third of the children were felt to have any significant improvement in their behavior, as compared to the families of 80% of the children who had been placed in the special class. Some of the studied children were out of school entirely, and their general educational achievement (a 50% rise in WRA scores for those available for testing) was far below that of those who had been in the class. (Of 14, 7 were educational casualties, i.e., out of school, part time, or EMR.)

Medications to help control behavior were much more successful in helping the children who were in the special class, and when used in conjunction with counselling, special management and structuring. The use of medication alone is much less often of benefit. The most useful drugs in our hands have been the amphetamines, dosages varying from 10 to 35 mg daily of amphetamine, the total often being divided between morning and mid-day. Not only is the drug more effective when used in conjunction with a special program such as the classroom, but the teacher is frequently a more reliable observer of its effects than the parents, some of whom seem to notice no change in the child's behavior at all.

SUMMARY:

1) Some children who fail in school in spite of adequate intellectual potential are found to have a neurological handicap. The handicap is manifested by behavioral difficulties in such ways as hyperactivity, distractibility, and shortened attention spans; by perceptual problems, such as difficulties with visual, motor, and auditory performance including some specific learning disorders, or by both behavioral as well as perceptual and learning problems.

2) The factors most frequently associated with school failure in children with organic brain injury are hyperactivity, distractibility, being a boy, and a disturbed home environment or one not suited to this particular child. The environment seems to play a major role in determining the degree and perhaps the kind of symptomatology any given child will manifest. Unless the fact is recognized that many of the symptoms are due to inherent differences in the child, attempts at management will not meet with optimum success.

3) Over 90% of all the children seen with abnormal and "organic" psychological test results had abnormal EEG's.

4) Screening of a normal fourth grade population produced a 5% incidence of children with psychological evidence of impairment due to organic factors, with about 3% with medically diagnosable organic brain injury. The incidence of children in critical need of special management because of the influence of organic brain dysfunction on their behavior and learning was found to be between 0. 1% and 0. 5%.

5) Over half of the children screened from a normal school population and found to have diagnosable brain injury were girls whereas 4/5 of the children referred because of school failure and found to have brain injury were boys, even though the 2 groups were indistinguishable medically and psychologically in terms of their physical findings and perceptual difficulties.

6) A special class for the hyperactive and distractible children is of particular value for those with average or better intellectual potential who are unable to stay and progress in a regular classroom situation. They respond well to the quiet and structured class and may not only achieve at grade level but make up for lost ground.

7) Adequate diagnosis and evaluation is essential, and our experience suggests that a team approach or at least the use of several disciplines is most helpful. The most difficult decision is what is best for the individual child whose welfare must always be the primary consideration.

GROUP I

Case No.	Sex	Age (yr)	Dx brain injury	Accepted for class	Initial IQ (WISC) Ver-bal	Perfor-mance	Full Scale	Inter-val (yr)	Grade Placement (WRA) Read-ing	Spell-ing	Arith-metic	Grade level achievement
1	M	9	yes	yes	79	69	70	1.9	+1.8	+0.9	+1.8	below
2	M	9	"	"	77	87	80	1.4	+0.6	+0.3	+0.2	"
3	M	8	"	"	108	76	92	1.3	+2.1	+4.3	+3.1	above
4	F	8	"	"	79	82	78	1.2	+0.6	+0.4	+0.7	below
5	F	8	"	"	74	85	77	1.0	+0.2	0	0	EMR
6	M	10	"	"	79	72	73	1.6	+1.1	+0.6	+0.9	below
7	F	10	"	"	90	89	88	1.9	+2.3	+2.6	+1.6	"
8	M	9	"	"	69	103	83	1.4	+0.6	+0.1	+1.2	"
9	M	10	"	"	94	92	92	1.6	+0.3	+0.4	+0.4	"
10	M	8	"	"	96	108	102	1.1	0	+0.2	+0.3	"
11	M	8	"	"	84	83	82	0.6	+0.3	-0.5	+0.4	"
12	M	9	"	"	-	-	-	0.4	+0.9	+0.8	+0.1	"
13	F	10	"	"	74	103	86	1.4	+0.7	+0.8	+1.4	"
14	M	9	"	"	75	79	75	1.3	+0.9	+0.6	+0.2	"
15	M	9	"	"	96	87	91	1.2	+0.5	+0.3	+0.8	"
16	M	8	"	"	89	103	95	1.0	+0.4	+0.5	+0.4	"
17	M	9	"	"	85	87	85	1.7	+2.0	+0.6	+1.3	"
18	M	8	"	"	71	87	77	1.4	+0.7	+0.1	+0.5	"
19	M	9	"	"	96	117	107					grade level
20	M	10	"	"	76	72	72					below
21	M	8	"	"	81	92	85	1.6				"
22	M	14	"	no	89	78	82					"
23	M	12	"	no								"
24	F	8	"	no	79	69	72	1.6	+0.1	+0.1	+0.4	"
25	M	8	no	no								"
26	M	10	yes	no	69	79	71	0.6	+0.7	+0.5	+1.2	"
27	F	9	no	no								"

GROUP II - SCREENED 4th GRADE BELMONT CHILDREN

Case	Sex	Age (yr)	Dx brain injury	Accepted for class	Initial IQ (WISC) Ver-bal	Perfor-mance	Full Scale	Grade level achievement
1	F	8	no	no	89	104	96	below
2	M	8	"	"	96	93	94	"
3	M	8	yes	"	118	99	109	at or above
4	F	9	"	"	86	89	86	"
5	F	9	no	"	104	93	99	"
6	M	9	"	"	89	96	91	"
7	F	9	yes	"	96	94	95	"
8	F	9	"	"	91	97	93	below
9	F	9	"	"	106	96	98	at or above
10	F	9	"	"	86	97	91	"
11	M	10	no	"	100	96	98	"
12	M	9	yes	"	113	128	122	"
13	F	9	"	"	89	79	80	below
14	F	9	no	"	101	93	97	at or above
15	M	10	yes	yes	91	100	95	"
16	F	9	"	no	101	110	106	"

THE HYPERKINETIC CHILD

A NEUROLOGICAL APPRAISAL

William Westerlin Anderson, M.D.

Duplicated for Circulation
by
Permission of

Dr. W. W. Anderson

by

San Mateo County Superintendent
of Schools Office

February 26, 1964

The investigation of the neurological factors in human behavior is a field that has received a minimal amount of attention by the clinical neurologist. A study of the child with hyperkinetic behavior offers the opportunity to investigate abnormal behavior patterns that develop early in life. Such a study may broaden our understanding of human behavior in general.

The characteristic behavior pattern of the hyperkinetic child is that of stimulus-oriented behavior, short attention span, low frustration tolerance, lack of fear, and distractibility, all of which may carry over into adult life. A large percentage of these children have difficulty with reading and mathematics in addition to their abnormal behavior pattern.

REVIEW OF THE LITERATURE

Hyperkinetic behavior disorders have been noted to occur following epidemic encephalitis by Hohman,[1,2] Kennedy,[3] Ebaugh,[4] and Strecker.[5] In a study of 50 cases, Strecker noted that the younger the child at the time he acquired encephalitis, the more likely was a post-encephalitic behavior disorder to develop. Strecker also observed that the children in whom parkinsonism developed rarely developed a behavior disorder. If the encephalitis was associated with severe delirium, then the possibility of these children developing a serious behavior disorder was extremely high. Strecker and Ebaugh[6] studied 30 hyperkinetic children with a past history of severe head injury. They noted the similarity between this group's behavior and that of children with behavior disorders following epidemic encephalitis. Blau[7] confirmed Strecker's observations in his original paper in 1936. In a second paper twenty years later,[8] he reversed his original statement and stated that all such children actually have an anxiety neurosis and that the behavior was the result of inadequate super-ego development.

The frequent occurrence of hyperkinetic behavior disorders in children born of complicated pregnancies and deliveries, especially prematurity, when compared with children without a history of such complications, has been reported by Harper.[9] In his study of 500 premature infants, there appeared to be an inverse relationship between the incidence of hyperkinetic behavior and low birth weight. Beskow[10] reported a 50 per cent incidence of hyperkinetic behavior in children with a history of prematurity. Dijkstra[11] and Rosenfeld and Bradley[12] found a similar incidence in children with a history of anoxia at birth. The extensive epidemiological studies by Pasamanick and coworkers[13-15] leave no doubt as to the role that complications of pregnancy may play in the development of the hyperkinetic syndrome as well as learning problems.

Falconer[16] reported 2 children with hyperkinetic behavior and psychomotor epilepsy associated with an intracerebral calcification. These calcified lesions were removed surgically with resultant improvement in behavior and a lessening in the number of seizures.

Ounsted[17] studied 70 epileptic children with the hyperkinetic syndrome and came to the conclusion that there was no genetic predisposition to the development of the hyperkinetic syndrome, although a genetic predisposition to epilepsy may play an indirect part in the genesis of this syndrome. Glaser[18] reported an incidence of hyperkinetic behavior in 19 or 25 patients with psychomotor epilepsy. Gibbs,[19] Garneski,[20] and others[21-24] noted 14 and 6 per second activity in the electroencephalograms of many children with behavior disorders. Various writers[25-28] have reported a high incidence of various types of abnormal electroencephalograms in childhood behavior disorders. Laufer[29] presented evidence that hyperkinetic children have a greater susceptibility to intravenous stimulation with pentylenetetrazol (Metrazol), as compared with a control group. Taterka[30] carried out a comparative study of emotionally disturbed children who had electroencephalographic abnormalities. Using the chi^2 test, he noted that 13 children with "full rotations" on the Bender-Gestalt had abnormal electroencephalograms. None of the control subjects had full rotations on the Bender-Gestalt nor did they have abnormal electroencephalograms. Full rotations on the Bender are accepted by most psychologists as evidence of organic brain disease.

Psychological tests are often helpful in the diagnosis of hyperkinetic behavior disorders.[31,32] The characteristic findings are those of disturbances in the visual-motor organizations and visual perception.[30-32] As a rule, the hyperkinetic child does much better on the verbal than on the performance portion of the Wechsler Intelligence Scale for Children. Brain-injured children characteristically do poorly on the hidden figure test.[33]

Rabinovitch,[34] in an analysis of reading disorders, noted that almost all children with primary reading disorders had associated behavior disorders compatible with the diagnosis of the hyperkinetic syndrome. It is noteworthy that the psychological test results of the children with reading disorders, but without hyperkinetic behavior disorders, are similar to those seen in children who have both phenomena.[35]

Prechtl,[36] in his classical paper describing the clinical picture of the hyperkinetic child, made the observation that almost all of these children have reading disorders. He examined 50 hyperkinetic children who had been referred for neurological examination because of school and behavior problems. Children with obvious neurological signs were excluded from his study. He noted choreiform movements in all 50 children. These movements could be detected electromyographically. Only 18 of the children had normal deep tendon reflexes. He pointed out the fact that behavior patterns of the hyperkinetic child may, along with disordered spatial perception and orientation, explain the learning problems. It is noteworthy that the neurological findings in both Rabinovitch's and Prechtl's series were similar.

MATERIAL AND METHODS

Thirty hyperkinetic children between the ages of 8 and 12, with borderline normal or higher intelligence and with no gross neurological defects, were evaluated neurologically, psychologically, and electroencephalographically. Twenty-three were males and 7, females. Carefully taken history regarding all possible etiological factors revealed the probable causative factors to be as follows: prematurity, 7; prenatal and paranatal with presumed cerebral anoxia, 15; infectious disease during infancy, 4; trauma, 1; and unknown factors, 3.

Thirteen children had a history of at least 1 convulsion and, of them, 7 are presently being treated for a convulsive disorder.

Of some interest was the finding that at no time were 2 children with this disorder seen in the same family. This would suggest that environmental factors were not particularly important in the genesis of this disorder. The parents were asked what, in their opinion, was the age at which they had noticed the onset of their child's behavior difficulties. Twenty-two children were reported as having age of onset below 2 years and 8 children as having onset between 2 and 5 years.

Many of these children had a history of colic and irritability during infancy.

Motor development was considered to be slow in 18 of the children studied and normal in 12. Speech development was considered to be normal in 15 and slow in 15. Muscle coordination was thought to be below that of their siblings in 27 of the 30 children. Twenty-five children were right-handed, 5 were left-handed, and 3 were ambidextrous.

Twenty-six children were reading at least two years below the level that would be expected on the basis of their I.Q. tests. Reversals and mirroring were extremely common, both in reading and writing. One child actually could read print upside down better than in the usual manner. None of the children had a family history of dyslexia, dysgraphia, or dyscalculia.

The neurological examination yielded the following significant findings: dysphasia in 3 children, rostral dominance in 12, right and left confusion in 11, and dyslexia in 25.

Positive pyramidal tract signs were elicited in 18 and choreiform or mirror movements were observed in 29 children.

Electroencephalograms were found to be normal in 4 children and abnormal in 26. Focal abnormalities were found in 6 children and nonfocal in 20. Figures 1 and 2 illustrate 2 electroencephalographic patterns from 2 hyperkinetic children.

Psychological tests showed signs of visual perceptual impairment in 16 and of visual-motor difficulties in 28. These impairments were manifested by distortions, simplifications, and rotations on the Bender-Gestalt. On the Wechsler Intelligence Scale for Children, the performance scale was 5 or more points higher than on the verbal scale in 14 children. In 3 children, the verbal scale was higher than the performance scale, and, in 13, the performance and verbal scores were equal.

Figures 3 and 4 illustrate typical Bender-Gestalt results from 2 hyperkinetic children.

DISCUSSION

The results of this study would indicate that hyperkinetic behavior disorders, with associated learning problems, are organic in origin. The most common element would seem to be that of complication in the prenatal, paranatal, or immediate postnatal period. The neurological findings were minimal with the exception of the "choreiform syndrome", rostral dominance, right and left confusion, and mild pyramidal tract signs. A high percentage of our group of patients had abnormal electroencephalograms.

Fink tested 300 normal children, ages 6 to 14, and found that 80 per cent of the children could localize asymmetric tactile stimuli by the age of 6. Symmetric stimuli were readily localized by age 3. Fink[37] also noted that children under the age of 6 have the same difficulty localizing asymmetric tactile stimuli as do the adults with organic brain disease. Cohn,[38] in a study of 46 children, ages 7 to 10, with reading, writing, and behavior disorders, noted an inability to identify paired stimuli in two-thirds of his cases. His results are very similar to the ones obtained in our study. The remaining results in his study are similar to the present one. It is noteworthy that Petrie,[39] in a study of 78 juvenile delinquents, found that they tended to underestimate the size of an object when it was placed in their hand. The visual-motor and visual-perceptual difficulties noted on the Bender-Gestalt and Wechsler Intelligence Scale for Children in our cases confirm the findings of other investigators.

Teuber[40] and Rudel[41] have carried out various types of visual, auditory, and spatial perceptual tests on children with known brain lesions, as compared to a control group. The brain-injured children lagged behind the control group in all fields. It is noteworthy that differences between the 2 groups in the ability to localized auditory stimuli did not appear until late childhood, whereas, on the other tests, the 2 groups seemed to differ at an early age.

From our studies and a review of the pertinent literature, it would seem that hyperkinetic behavior disorders are the result of a lack of adequate integration of visual, tactile, and auditory stimuli.[42] It is proposed that the hyperkinetic behavior, as well as the associated learning problems, are a result of inadequate analysis, synthesis, and integration of visual, auditory, and tactile stimuli at higher cerebral levels of function. The stimulus-bound behavior of the hyperkinetic child is a reflexion of an inability to synthesize incoming sensory stimuli, which continually bombard a disorganized and immature perceptual apparatus. As a result, the child tends to react to every stimulus. The learning problems undoubtedly have a similar origin since he lacks the capacity to distinguish between those sensory inputs that are important from those that are not.[43,44] No one specific area of the brain need be implicated in order to explain this disorder.

CONCLUSIONS

Thirty hyperkinetic children were given complete neurological and psychological examinations, as well as electroencephalograms. The neurological examination was abnormal in some respects in all but 1 child. Problems in visual-perceptual and visual-motor integration were noted in almost all of the cases. It is postulated that the entire syndrome is due to the lack of adequate integration of various types of perceptual modalities, as a result of minimal brain damage.

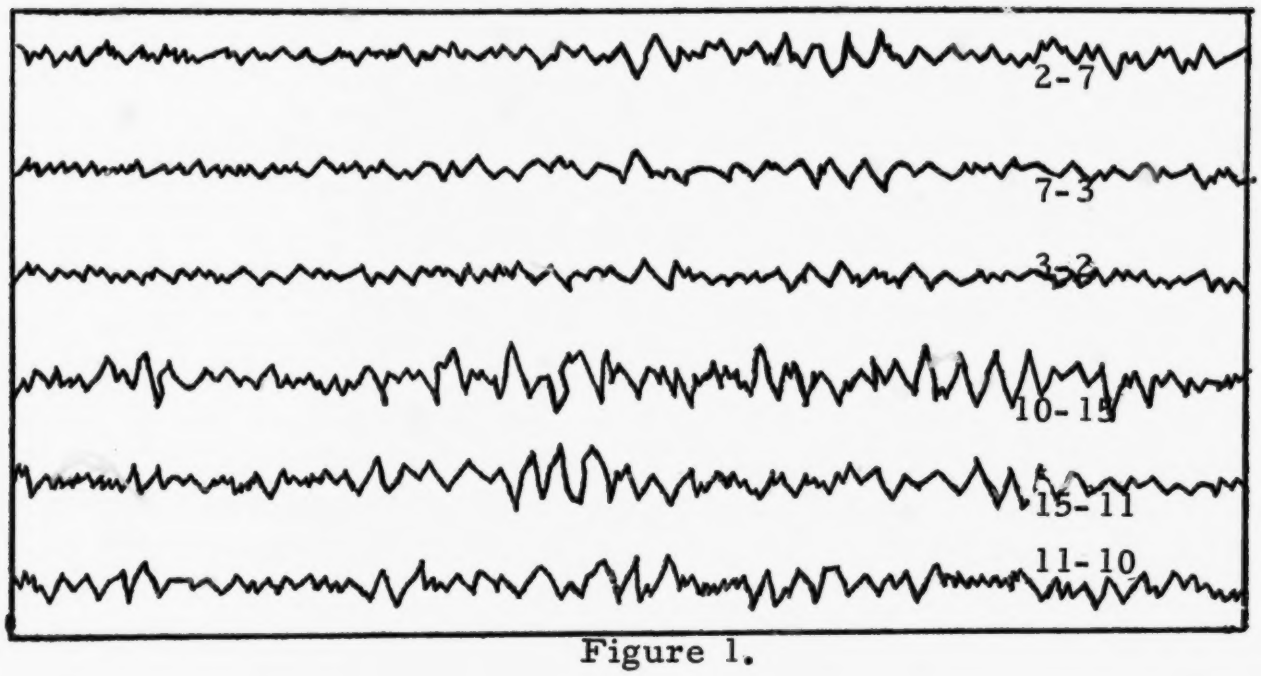

Figure 1.

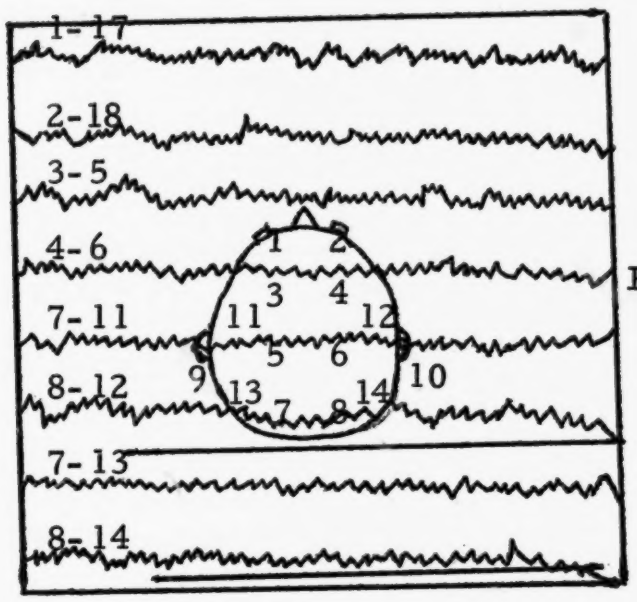

Figure 2

Figure 3

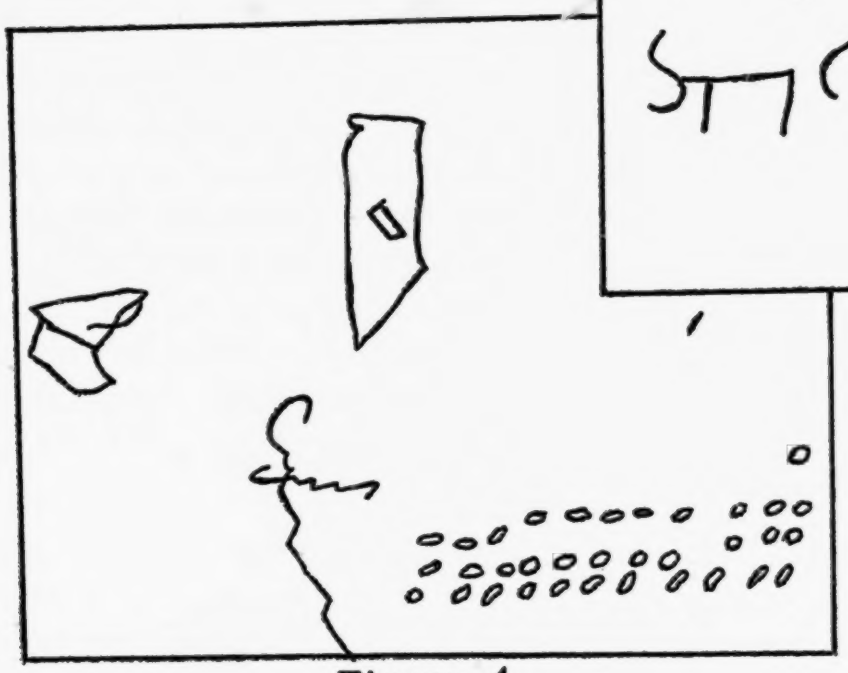

Figure 4

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SUGGESTED ENVIRONMENT

and

SOME BASIC PHILOSOPHY

for

a

CLASS

for

EDUCATIONALLY HANDICAPPED CHILDREN

by

Madeleine Lassers

San Mateo County Pilot Class
September 1960 - June 1964
Mrs. Madeleine Lassers, Teacher

PART I

ENVIRONMENT

CLASSROOM:

Considered ideal in the present project is a room large enough to seat children well apart and to have different activities going on without interfering with each other, i.e., a room considered large enough for the average group of 30 is about right for 8 neurologically handicapped children.

Provision should be made for cutting down the space for individual children and activities in order to avoid the feeling of "floating off" in space. Large, stable, movable partitions, plus three-sided "private offices" for each child's desk are ideal. Windows should be blocked off by paint or some other means of cutting out outdoor distractions while admitting the light.

FURNISHINGS:

Besides the partitions small individual tables for desks, and a small shelf of some sort should be provided for each child. Tables which can be fitted together to form a large table would be most ideal. Tables should be approximately 36" x 24" with adjustable height. Two or three large tables for lunch and other activities are needed, plus chairs, book shelves and closed cupboard space for all materials. Space for storing each child's work and materials away from his office is needed. He then takes only one or two work assignments to his office at a time. This helps him stick at one job until it is finished and avoids the distraction of other materials. It also provides him with a structured need to move about every so often and tends to minimize aimless wandering, resulting from the difficulty he is apt to have in staying in one place for very long.

Maps, a globe, reference and "fun" books, along with some work of the children may be arranged or displayed in a corner behind two or more of the partitions. Individual children may use these materials as they need them, or as they are able to tolerate the added stimulation. Single maps may be displayed on the inside of a partition and the partition pulled out to expose the one map as it is needed.

A bulletin board in the school hall where work or projects may be displayed is excellent. Probably the only materials which should be on general display in the room are a clock and a flag, and for some groups these may be too distracting at the beginning. The teacher's desk should have little on it and when working with a child only the materials actually being used should be displayed. A closed mobile cart where the teacher can place materials she will use for the day, and push the cart around from desk to desk or table to table is excellent. One or two easels with paint, etc., may be kept up but placed so that they are out of the view of children not using them.

CLASS SIZE:

Eight children are about as many as one full-time teacher and a part-time helper can handle.

RECESS:

Provision for limiting and structuring recesses should be made. Gradually increasing participation in general recesses involving large groups and 'free play" may come as the children improve in self-control.

TEACHERS

of these classes are subject to far more than the usual amount of frustration and tension. A vast amount of preparation for each individual child is needed, often involving making the materials used. Provision should be made for help (typing, etc.) in this work and some arrangement should be made which allows time for this preparation. The teacher needs understanding and support from her administrators.

NEW CLASSES ARE BEST STARTED

with one or two children, the others to be added as the first ones become accustomed to the routine. "Make haste slowly" is a wise admonition for these groups. Where at all possible, consideration might be given to a "staggered" arrival and departure of children daily, with a few in the morning, all there in the middle of the day, and the late comers making a small group in the afternoon.

REST:

If children are present for a full-day some provision for resting - on cots - is advisable. Their very hyperactivity and tension wears them out, without their realizing it.

PARENT-TEACHER CONFERENCES

are very important. A good understanding of what the teacher and school are trying to do for the child and how they hope to accomplish their goals tends to create confidence and co-operation on the part of the parents. Again this takes more than the usual amount of time on the teacher's part and should be taken into consideration.

VISITORS

cannot be tolerated by NH groups. One visit and most of a day's work is lost. Observation should be by a one-way screen only.

LENGTH OF STAY IN CLASS:

The learning problems, personality and behavior difficulties exhibited by most of these children cannot be helped in a brief time. Most of them can be helped but it is a long, slow process involving many subtle changes. It seems to this teacher that a child who is ready to return to a regular class in a year's time didn't really need to come into the class, but rather needed some remedial work.

PART II

BASIC PHILOSOPHY

SOME PROBLEMS AND SOME ATTEMPTS TO MEET THEM

Certain behavior problems seem characteristic of a large number of neurologically handicapped children. The following are some of the problems and the ways in which we have attempted to meet them.

PROBLEM I:

Most of these children are unable to screen out any stimuli and are thus bombarded by distracting stimuli from every direction.

MEETING THE PROBLEM:

We attempt to control this by making the school room as free of general stimuli as possible and exposing the child to the one stimulus we wish him to attend to. This is carried on from blocking out the windows to using a black paper "screen" over a book with "windows" cut in it so as to expose one line or one word at a time. The teacher dresses simply with no distracting patterns in her clothes, no earrings, beads, flowers, etc., or exciting colors.

PROBLEM II:

Most of these children are highly distractible and many are hyperactive to an extreme degree.

MEETING THE PROBLEM:

Everything possible is done to cut out distractions. Each child works alone in his own office or alone with the teacher at her desk or a table with a screen to cut off any movement of the other children. The classroom atmosphere is relaxed and extremely quiet with an emphasis on not doing anything to disturb the other workers. (Some provision for occasional non-punitive exclusion from the group needs to be made.) As children improve in self-control and ability to concentrate they are encouraged to move their desks out in the room, whenever they are able to work there.

At the beginning of our class all work was individual, one child at a time with the teacher and no group work. First attempt at group activities in the last half hour of the day resulted in bedlam - it was given up and several weeks later started again, first bringing two children together on part of a project; another two on another part of the same project. When these two "groups" were going well they were joined in a continuation of the same project and another "group" of two started. By the end of the first year five or six of the children were able to work on a joint project, coming together briefly and then separating in two's or

three's to carry on. By the end of the second year afternoons could be pretty well devoted to group projects with, usually, one or sometimes two children needing to work in the "peace and quiet" (the phrase is that of one of the children) of his own office. Morning academic work is still mostly one child with the teacher, though two and sometimes three children may work together in some areas. They are often paired not on an equality of achievement basis but on a supplementary basis. A child who reads well but does not always understand what he reads works with a child who reads less well but understands easily.

PROBLEM III:

Most of these children are disorganized, unable to make choices, can't decide where to start or when to stop.

MEETING THE PROBLEM:

The program is highly structured and few (at first, no) opportunities for choices are offered. Each child knows exactly what he is to do when he comes in in the morning, and every attempt is made to see that he carries through on every job. A highly structured program helps these children by eliminating the need to make decisions; eliminating much distraction and helping them learn to organize their thoughts, work and behavior. At the same time considerable flexibility is needed in order to adjust the program to the changing needs of individual children. By the end of the second year children were being encouraged to make choices in certain limited areas.

PROBLEM IV:

Most of these children have experienced nothing but failure in the school situation and often failure in the home and social situation.

MEETING THE PROBLEM:

Every child must have success every day. Only as he is able to tolerate it, is real criticism offered. Work tasks are such that the teacher knows he can experience success in at least some of the work. At first he must have success in almost everything he attempts. As he begins to see himself as a worthwhile individual with some capacities his work is gradually increased in difficulty. It may take many months before a child is working at his actual capacity where failure mingles with success. Even then correction is usually made by leading the child himself to find his error and correct it so he still achieves success. We work through strengths - first emphasizing what the child does best and only later working on his weakest areas.

PROBLEM V:

Most of these children feel they are unsatisfactory. They are unhappy and unhappy about themselves. Many will explain their "problem" at great length. Many are highly inconsistent in performance. A child able to spell ten words today may remember only two of them three days later and again know them all the day after! A child working easily at third grade arithmetic may suddenly be unable to achieve at a first grade level! This characteristic occurred in a greater or less degree in all the children we worked with. In some, it was apparent often, but in fluctuating degrees. In some, it occurred only occasionally and at widely separated intervals.

MEETING THE PROBLEM:

Remember that this is going to pass and then return. "Temper the wind to the shorn lamb." The child who is suddenly frustrated by his inability to do the work he has been doing with a real sense of accomplishment is told - "Let's put this away for awhile and try this, it will help you understand your regular work better," - and something different, not just easier, is substituted. If you find it is an "off" day for a child change his assignments for the day, or several days or weeks, as needed. Basic to the child's academic achievement or behavior improvement is his feeling about himself and his relationship with the teacher. Once he comes to feel that she is "on his side", is his friend, who has some understanding of his difficulties and wants to help him, he wants (most of the time) to work with her. Once he begins to feel he is a worthwhile person who can do some desirable things he is ready to go. The teacher needs to achieve a gentle but absolute firmness and avoid being against the child. If possible never "catch" him doing something he shouldn't do. Give some kind of a warning that will stop him before he realizes you are aware of his transgression. (This, of course, does not apply to some situations as one child hurting another.) Anticipate diffi-

culties and start the child down a different path. Change his activity or his pace. Maybe the work is too hard - maybe there was some unhappy occurrence at home before he left. Often his posture at his desk will be a warning to you. Frequently his walk across the room tells you he's forgotten to take his pill - he's about to have a seizure - or he's looking for some outlet for unbearable frustrations. Many times you can help him before a situation arises - supply him with an acceptable outlet for his frustrations.

PROBLEM VI:

Most of these children are disinhibited, lack self-control.

MEETING THE PROBLEM:

Limits - definite and positive limits need to be set and the teacher must know the child understands them, but these limits need to be broad and basic, not picayune and constricting. In the case of the experimental class they were simply, "You may not hurt anyone else. You may not destroy anyone else's or the school's property. You must behave so that other people who want to work may do so."

In our group verbal attack was entirely acceptable to the teacher but not toward the other children. When uncomplimentary remarks or appellations are addressed to other children the addressee is apt to become upset and angry. Therefore, it was generally considered, through discussions of courtesy and kindness, bad form to call other children "names". However, again in discussions, it was pointed out to the children that the teacher was a grown-up who understood much about their "difficulty" and knew they sometimes were angry and so if they called her names or said unkind things about her she understood why they did it. She was sorry they were angry but she was not "mad" at them. Every attempt was made to free children from any sense of guilt about such an outburst. Out of 8 children, four exhibited this behavior, one even resorting to physical attack on the teacher (this was not tolerated!). Within six months three of the four had passed through this phase and at the end of the year the fourth also seemed no longer to need this outlet.

CONCLUSION:

The teacher of a neurologically handicapped group, herself experiences considerably more than the usual amount of frustration. The very inconsistency of the children's performance can, at times, be bewildering. Their often unpredictable, disinhibited behavior can be exasperating for the minute, especially when she is annoyed, tired or discouraged. However, it would seem that a mature adult with insight and considerable understanding of the difficulties these children experience, though she may at times purposely exhibit righteous indignation, cannot be truly exasperated with them. In our group when something "exasperating" occurs the teacher habitually closes her eyes, turns her head toward the ceiling, clasps her hands and counts slowly and distinctly to ten. This is accepted as a sign that teacher is "holding on to herself" (something the children are frequently asked to do). Children stop and watch - laugh gently, since they understand it's a kind of a joke - and when the counting is over everyone sighs and returns to business as usual. When all else fails there is a desk available in an adjoining storeroom (with light and ventilation) where a noisy or uncontrolled child may work alone until able to be reasonably quiet in his own office. During the first month this was used frequently, by the end of the second year it was very rarely used. Final action involves the child's staying home for a day or two - not as punishment but simply to rest and "get hold" of himself. For this to be useful very careful preparatory work needs to be done with the parents. This final action was used several times for one child.

Many of our children have worked out rather intricate methods for controlling their environment. Scenes of various sorts, temper tantrums, tears, depression, "I've-given-up - I'm-a-failure"; violence toward members of families or teachers - all of these originally expressed extreme frustration. All too often, however, the child soon learns that these activities on his part result in annoyance, anger, dismay - sometimes actual fright - on the part of the adults in his environment (not to mention his siblings).

Thus the child's behavior becomes a "big stick" in his hands. A sort of "cold war" situation results with the child on one side and everyone else on the other side - and the "balance of power" frequently rests with the child! It is important for the child to learn more acceptable ways of behavior for his own sake and for the sake of his family's sanity! It is first necessary to find ways of circumventing as much of his frustration as possible, find things in which he can be successful and give him attention, praise and recognition for his efforts toward desirable behavior. Undesirable behavior should receive as little attention as possible. If

attempts to "rechannel" his activity, and then mild reprovals do not bring desired results he should be excluded from the group - sent to his own room - until he is able to control himself - then forget it - start anew - don't harp on poor behavior but do harp on desirable behavior. Do everything possible to build up his "good" feelings about himself - to help him find friends and interesting activities. A twelve year old boy once said to me, as we were discussing his mis-deeds - "I have nothing to look forward to!" - Help your child have "something to look forward to!" - interesting activities - a fishing trip or a ball game with Dad. A family jaunt to the beach - a trip to the museum - any of dozens of simple things - but schedule them - put them on your calendar so he can look forward to them.

REMEMBER he is:

disinhibited
uncontrolled
hyperactive
has perceptual difficulties which make the world most confusing
can't "screen out" any stimuli
has few or no friends
is a stranger to success
that the average environment is wildly exciting to him and causes him utter confusion.

REMEMBER that patterns of behavior that have existed for years take years to change.

REMEMBER, too, that he needs quiet, order, limits, control and love!

A SEQUENCE FOR TEACHING WRITING*

Pre-writing Activities

I. Games and activities for establishing right and left sides; up, down, above, below, under, on top, bottom, before, after, first, last, etc.; and for establishing left to right progression.

II. At the chalk-board, scribbling games, dot to dot games, clock game, etc.*

III. Work with templates and colored chalk at board.
   a. Trace templates with finger
   b. Trace with chalk
   c. Trace lines with different colored chalk after removing the template
   d. Trace line without template
   e. Look at template and reproduce shape on board
   f. Reproduce shape on verbal request

IV. All of the above on large paper at easel
   b. on large paper at table
   c. on small paper at desk

V. Begin teaching actual cursive writing.

* See Kephart, SLOW LEARNER IN THE CLASSROOM

SOME WRITING-READING HELPS

Tracing words on board with finger (see it, say it, hear it, feel it). *

Tracing words written on paper towels or sandpaper.

Tracing or writing words in moist clay tablet.

Pressing bright colored plastic string into formed words on clay tablet.

Finger painting to music that has a definite "flowing" rhythm (Strauss waltzes are good).

Encourage use of the whole upper part of the body.

Try to get child to hum a tune as he paints.

First use any stroke he wishes then curves used in cursive writing.

Do it with the children.

Everybody has fun!

* There is some disagreement on the use of several modalities at one time. Some authorities believe only one or two should be used at once. I have found the above helpful.

SOME BOOKS USEFUL TO PARENTS AND TEACHERS INTERESTED IN HELPING THE NEUROLOGICALLY HANDICAPPED CHILD

Strauss, Alfred A., and Lehtinen, Laura E., Psychopathology and Education of the Brain-Injured Child, Vol. 1, Grune and Stratton, N. Y., 1947. A basic book in this field. Rather long but well worth it if you are professionally interested in the problem.

Cruickshank, William M., and Bentzen, Frances A., Rathzeburg, Frederick H., and Tannhauser, Mirian T., A Teaching Method for Brain-injured and Hyperactive Children. Syracuse Univ. Press, 1961. A new and comprehensive book on the education of the neurologically impaired child. Middle section is written by the teachers working with these children and is made up of methods and techniques useful in the classroom. Lots of good materials.

Kephart, Newell C., The Slow Learner in the Classroom, Chas. E. Merrill Books, Inc., Columbus, Ohio, 1960. NOT written about the retarded child, this book is filled with much usable material. Games, evaluation techniques, methods and teaching techniques are included. Probably the most useful single book for the classroom teacher of which the writer knows. Could also be useful to parents.

Siegel, Ernest, Helping the Brain Injured Child, Association for Brain Injured Children, 305 Broadway, N. Y., 1961. Written as a "handbook for parents" this book has an excellent philosophy and covers such subjects as mental hygiene, management and control, education, etc. Has much teaching material suggested for the parent whose child is out of school, which would also be very useful to the teacher trying to help the child in a regular class.

Myklebust, Helmer R., Exceptional Children, Vol. 29, No. 1, Sept. 1962, "Dyslexia in Children". A concise and most interesting article which is very useful to a teacher trying to understand why the child cannot learn to read by the usual methods. Suggests a helpful classification of various manifestations of the child's difficulties. Many references given for additional materials. Would be helpful to parents in understanding the problem, or working with a child.

Monroe, Marion, Children Who Cannot Read, Univ. of Chicago Press, Chicago, Ill., 1932. One of the basic remedial books. Much helpful material not only for "the child who cannot read" but for teachers working with children who may have difficulty in reading.

Gillingham, Anna, and Stillman, Bessie, Remedial Work for Reading, Spelling and Penmanship, 2nd Ed., N. Y., Sackett and Wilhelms, 1940 (?). Much specific material for working with children needing help. Could be useful to parents as well as teachers.

Barry, Hortense, Teaching the Young Aphasic Child, Alexander Graham Bell Assoc. for the Deaf, 1961. A short, simple and most interesting book.

Birch, Herbert G., M.D., Ph.D., Brain Damage in Children (the biological and social aspects), Williams and Wilkins Company, 428 E. Preston St., Baltimore, Md., 21202, 1964. $5.95.

A GUIDE for SCREENING APPLICANTS to SPECIAL PROGRAMS for EDUCATIONALLY HANDICAPPED CHILDREN

by

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STATEMENT PERTAINING TO USE OF GUIDE

This is a guide for use by the school psychologist in gathering relevant information about children who have an educational handicap associated with neurological and/or emotional problems.

Since the school psychologist is a key person in coordinating a diagnostic study at the school level, the guide has been developed largely for his use. He may wish to use sections of the guide in structuring interviews with other key persons, and if appropriate, he may ask other professional persons to obtain some of the information.

A formal psychological report should accompany referrals to the Evaluation Committee and should make use of the information contained in this guide. If further information pertaining to any specific area of inquiry is desired by the Committee, the necessary part, or parts, of the guide should be made available to the Committee upon request. The final psychological report should attempt to incorporate all salient aspects of the inquiry.

THE EVALUATION COMMITTEE

The Evaluation Committee for placement of Educationally Handicapped Children should ideally include representatives of several disciplines.

The following disciplines are suggested and should probably be included:

1. Education
   - County and local district representatives
2. Medicine
   - Psychiatrist
   - Pediatric neurologist
3. Psychology
   - A clinical psychologist
   - A school psychologist
4. Other specialists should be consulted when appropriate and as needed.

The functions of the Evaluation Committee should include the following:

1. To review all relevant material submitted on each applicant for the special program
2. To determine whether the child has a neurological and/or emotional handicap so diagnosed by appropriate specialists pursuant to the provisions of Education Code 6756
3. To determine whether the child has marked learning or behavior problems or a combination thereof which prevents his receiving the reasonable benefit of ordinary education facilities
4. To make a recommendation regarding desirability of placement in one or more of the following programs:
   a) special class
   b) learning disability group
   c) home or hospital instruction (includes a regularly established nonprofit tax-exempt, licensed children's institution)

NOTE: A child should not be referred for placement in the Neurologically Handicapped Class if another special placement is more appropriate.

The educational and behavioral background form which follows is suggested as a guide for the school psychologist in obtaining information in conferences with the classroom teacher and other relevant persons. A careful study of the cumulative record is an important step in developing this information.

EDUCATIONAL AND BEHAVIORAL BACKGROUND INFORMATION

I. Educational History

School Year	Age	Grade	District	School	Teacher

II. Problems in Academic Areas:

A. Reading

1. Describe specific reading difficulties
2. When were these difficulties first evident?
3. Has this problem been consistent or sporadic in nature?

4. In your opinion, at what grade level does this child function in:

   a. Reading Comprehension _____
   b. Vocabulary _____
   c. Oral Reading _____
   d. Silent Reading _____

5. Describe instructional methods which have been used with this child and with what results.

B. Arithmetic

1. Describe specific difficulties in working with numbers.

2. When were these difficulties first evident?

3. Has this problem been consistent or sporadic in nature?

4. Note specific comments on this child's development in:
   a. Number concepts (i.e., time and money)
   b. Arithmetic fundamentals (indicate grade placement)
   c. Arithmetic reasoning (indicate grade placement)

5. Describe instructional methods used with this child and with what results:
   a. Visual -
   b. Auditory -
   c. Tactile -
   d. Kinaesthetic -

C. Other (please explain):

III. The Wide Range Achievement Test

A. Date of administration_____ Grade at time of administration_____
   Age at time of administration_____

B. Spelling Grade Placement_____ Reading Grade Placement_____
   Arithmetic Grade Placement_____

C. Please check to indicate if booklet is enclosed with psychological report Yes ( ) No ( )

IV. Achievement Test Date
(Give grade placement scores of the rating of reading ability in grades 1 and 2, under the heading "Total Reading")

Name of Test	Form	Grade Given	Date Given	Read. Voc.	Read. Comp.	Tot. Read.	Arith. Reas.	Tot. Ar.	Spell-ing	Tot. Lang.	Total Test

V. Facility of Communication in the Classroom Situation
(Try to differentiate between difficulties in abstract and concrete thinking)

A. What specific difficulties are evident in:

1. Oral communication -

2. Written communication (please note difficulties in spelling, organizing written work, handedness, and small muscle activity)

B. 1. What difficulties are apparent in communicating to others?
(Is he able to say what he means to make himself understood? Give examples.)

2. What difficulties are apparent in receiving communication from others? (Give examples)

VI. General Classroom Behavior

Which of the following general characteristics are apparent:

	Mild	Moderate	Severe
A. Repetitive Behavior	____	____	____
B. Short Attention Span and/or Distractibility	____	____	____
C. Unpredictable or Inconsistent Behavior	____	____	____
D. Impulsiveness	____	____	____
E. Severe Anxiety	____	____	____
F. Infantile Behavior	____	____	____
G. Disorganization	____	____	____
H. Deficiencies in Motor Control			
a) Fine	____	____	____
b) Gross	____	____	____
I. Hyperactivity	____	____	____

PSYCHOLOGICAL DATA

Note: I (or II), III, and IV are required as a battery. (Appropriate substitute tests in individual situations may be used.)

I. A. Wechsler Intelligence Scale for Children

Verbal Scale I.Q._____ Performance Scale I.Q._____ Full Scale I.Q._____

Subtest	Scaled Score	Subtest	Scaled Score
Information	____	Picture Completion	____
Comprehension	____	Picture Arrangement	____
Arithmetic	____	Block Design	____
Similarities	____	Object Assembly	____
Vocabulary	____	Coding	____
Digit Span (Raw Score)	____	Mazes	____
Digits Forward _____			
Digits Backward _____			

B. Summary of Specific Test Behavior Suggesting Possible Organicity:

(Examples: memory loss, impaired visual-motor coordination, excitability, inter- and intra-test variability, anxiety, deficiency in abstract concepts, perseveration, etc.)

_____

_____

_____

II. A. Stanford-Binet Form L Form M M.A._____ C.A._____ I.Q._____

(Circle one) Range: Basal_____ Apical_____

B. Summary of Specific Test Behavior Suggesting Possible Organicity:

(See examples under I. B above)_____

_____

_____

III. Bender Gestalt

Comments about organization of designs on page_____

_____

_____

_____

Drawings appropriate for degree of maturation? Yes____ No____

Comments_____

_____

_____

Findings which are felt to be significant in supporting a diagnosis of organic disturbance: _____

_____

(Please fill out the Bender Gestalt Rating Sheet and include it with the psychological report.)

IV. Draw-a-Person

Findings which are felt to be significant in supporting a diagnosis of organic disturbance: _____

_____

_____

(Please fill out the Draw-a-Person Rating Sheet and include it with the psychological report.)

V. Other Possible Tests:

Goldstein and Scheerer Cube

Rorschach

Other

Interpretations of these and other tests which are felt to provide additional corroboration of neurological impairment should be included on a separate sheet and attached to this form.

VI. Check List of Specific Test Behavior

	Mild	Moderate	Severe
1. Hyperactivity	____	____	____
2. Perseveration	____	____	____
3. Short attention span and/or distractibility	____	____	____
4. Unpredictable behavior	____	____	____
5. Variability in behavior	____	____	____
6. Irritability	____	____	____
7. Impulsiveness	____	____	____
8. Severe anxiety	____	____	____
9. Infantile behavior	____	____	____
10. Self-assertiveness	____	____	____
11. Disorganization	____	____	____
12. Deficiencies in motor control:			
a) Fine	____	____	____
b) Gross	____	____	____
13. Fatigueability	____	____	____

VII. Summary of Psychological Data

DEVELOPMENTAL HISTORY

This outline gives examples of the developmental aspects that might be significant in obtaining the history of a child in an interview with a parent. One of the purposes of this history is to establish to what extent any developmental difficulties might have been due to interpersonal as against central nervous system disturbances.

Do not feel that you need to get information on all areas or that you have to confine yourself to our guide in conducting an interview. Please use this form to organize the data which you will obtain in your clinical interview.

DEVELOPMENTAL HISTORY

Child's Name_____ Date of Interview_____

Interviewer_____ Informant_____

The parent may attempt to focus mainly on the present, but in this interview we would like to focus on the history.

I. Feeding and Weaning: (Examples: sucking, swallowing, regurgitation, transition to solid foods, expression of food preferences, self-feeding, spontaneity of asking for food)

II. Motility: (Examples: supporting the head, turning over, sitting, crawling, standing up, walking, climbing steps)

III. Dexterity: (Examples: grasping objects, fitting objects into one another, building a tower of several blocks, tracing a line, cutting with scissors)

IV. Toilet Training: (Examples: age begun bowel training, age completed bowel training - with child responsible, age begun bladder training, age completed day-time control, age completed night-time control)

V. Speech: (Examples: pre-language sounds, age at first words, age at first simple sentences, complexity and correctness at present, method(s) of communication if child is non-verbal)

VI. Emotional and Social Responsiveness: (Examples: imitative behavior, initiative, aggressivity, affectionate behavior, control factors - ability to postpone gratification, ability to absorb emotional and social stimulations, ability to tolerate frustrations imposed by the environment and based on his own shortcomings, typical ways to deal with anxiety)

VII. Attention Span: (Examples: usual time spent with self-chosen activities, ability to remain with an assigned task, distractibility from without, distractibility from within, physical restlessness)

VIII. Intellectual Interests: (Examples: age of first asking of question "why" and "how"; ability to understand, to take apart and put together objects, gadgets; listening to stories; reading; breadth of interest; music - active, passive; painting, drawing, etc.)

IX. Mother's Reactions at Time of Interview: (Examples: resistance, anxieties, memory lapses, eagerness, cooperativeness, etc.)

X. Summary:

A PROPOSED FORM LETTER
for
obtaining medical information for placement in programs
for
EDUCATIONALLY HANDICAPPED CHILDREN

Dear Dr. _____:

_____(child's name)_____ is being considered for possible placement in a program for "educationally handicapped" children. In order to determine if ___(he/she)___ would benefit from this particular program, we would appreciate your evaluation of ___(his/her)___ general medical and neurological status. ____(parent's name)____ signed release is enclosed.

By "educationally handicapped" we mean to include children diagnosed or suspected of having some degree of organic brain impairment and/or emotional disturbance. We expect to provide special teaching methods for children with defects in the perceptual-motor functioning. Children with marked physical handicaps or mental retardation will not be accepted in this particular class, although they might be entered in one of the other programs. It is intended that children with organic behavior syndrome (hyperkinesis, short-attention span, etc.) be eligible even if the neurological examination is otherwise negative.

For your convenience, we have prepared a brief questionnaire and enclose an envelope in which your report can be mailed directly to our evaluation committee. Should there be some additional questions, it is possible that the physician, who serves as our consultant, may contact you directly. We hope, however, that the enclosed questionnaire will suffice for our needs. Thank you for your assistance.

Sincerely,

_____

xxx/xx

Enclosure

MEDICAL AND NEUROLOGICAL DATA

Physician's Name_____ Date_____

Address_____

_____ _____ _____
Child's Name Address Birthdate

General Physical and Neurological Status:

Date First Examined_____

Date Last Examined_____

Presently under treatment or supervision?_____

Orthopedic problems?_____(please specify)

Visual acuity?_____ R_____ L_____ Corrected to R_____ L_____

_____ Muscle imbalances?

_____ Field defects?

_____ Fundi?

Hearing problems?_____ _____Audiometric tests? Speech problems?_____

Neurological problems?_____

(Please encircle as indicated)	⊕	-	not examined
Results of general neuro exam	+	-	not examined
EEG results	+	-	not examined
Other special tests	+	-	not examined
Encephalograms, ventriculograms, angiography, etc.	+	-	not examined
Psychological tests	+	-	not examined
Psychiatric evaluation	+	-	not examined

History or evidence of convulsive disorder?_____

_____ Petit mal

_____ Psychomotor

_____ Grand mal

If applicable, date last seizure_____

Current frequency_____

Medication_____

Special precautions_____

History or evidence of central perceptual or motor disorders affecting language?

_____ Speaking

_____ Listening and Understanding

_____ Writing

_____ Reading and Understanding

History or evidence of mixed cerebral dominance

Handedness_____

Eye preference_____

History or evidence of behavior compatible with organic brain syndrome

_____ Hyperactivity
_____ Short attention span - distractibility
_____ Accident prone
_____ Variability of behavior
_____ Impulsiveness
_____ Irritability
_____ Explosiveness
_____ Poor concentration - poor school work

Diagnosis, if available

Other health problems (e.g., cardiac, renal, endocrine, etc.)

Physician's recommendations for special school program

Any special precautions?

Other advice or comments

Your cooperation is appreciated.

Sincerely,

_____
(School Physician)

NOTE: This form is highly tentative. The physician on the screening committee, of course, should feel free to revise this form or use his own.

The following proposed checklist is suggested as a guide for the school psychologist in developing a combined picture of the way this child is seen by adults (parents, teachers, specialists, psychologists, etc.). It also serves as a worksheet for developing a summary statement of behavior.

TOTAL IMPRESSION OF COMMUNICATIVE SKILLS

Proposed checklist for EHC

* Slight - interferes periodically or consistently, but not significantly with normal communication
Moderate - makes normal communication difficult but not impossible
Extreme - normal communication is seldom possible, always difficult

			COMPENTENCY (check ☐)				
			No Disability (1)	*Slight Disability (2)	*Moderate Disability (3)	*Extreme Disability (4)	Complete Disability (5)
SPEECH:	1)	Defects in articulation	☐	☐	☐	☐	☐
	2)	Inability to use appropriate sequence of words	☐	☐	☐	☐	☐
	3)	Failure to start a sentence	☐	☐	☐	☐	☐
	4)	Failure to complete a sentence	☐	☐	☐	☐	☐
	5)	Substitution of inappropriate words	☐	☐	☐	☐	☐
	6)	Apparent lack of understanding in use of speech	☐	☐	☐	☐	☐
	7)	Stuttering	☐	☐	☐	☐	☐
HEARING:	1)	Hearing loss - a. Right ear	☐	☐	☐	☐	☐
		b. Left ear	☐	☐	☐	☐	☐
	2)	Distortions in interpreting sounds	☐	☐	☐	☐	☐
	3)	Defects in auditory memory	☐	☐	☐	☐	☐
VISION:	1)	Visual acuity - a. Right eye	☐	☐	☐	☐	☐
		b. Left eye	☐	☐	☐	☐	☐
	2)	Inability to use visual cues (facial expression, gestures, body movements)	☐	☐	☐	☐	☐
	3)	Perceptual distortions	☐	☐	☐	☐	☐
	4)	Inability to integrate visual symbols - a. letters	☐	☐	☐	☐	☐
		b. words	☐	☐	☐	☐	☐
		c. numbers	☐	☐	☐	☐	☐
	5)	Inability to associate objects with visual symbols (i.e., the number "3" with 3 objects)	☐	☐	☐	☐	☐
	6)	Defects in visual memory	☐	☐	☐	☐	☐
MOTOR COORDI-NATION	1)	Difficulties in free drawing	☐	☐	☐	☐	☐
	2)	Difficulties in copying symbols	☐	☐	☐	☐	☐
	3)	Difficulties in printing	☐	☐	☐	☐	☐
	4)	Difficulties in writing	☐	☐	☐	☐	☐